



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/943,355	08/31/2001	Satoshi Arakawa	Q66024	8635

7590 10/29/2003
SUGHRUE, MION, ZINN, MACPEAK & SEAS PLLC
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037-3202

EXAMINER

HANNAHER, CONSTANTINE

ART UNIT	PAPER NUMBER
----------	--------------

2878

DATE MAILED: 10/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/943,355

Applicant(s)

ARAKAWA, SATOSHI

Examiner

Constantine Hannaher

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: the amendment to page 5 of the specification is not in compliance with 37 CFR 1.121 because it does not indicate *all* the changes to the paragraph.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5, 7, 17, 19, 9-13, 15, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saotome *et al.* (US005115132A) in view of Arakawa (JP11-38533A).

With respect to independent claim 1, Saotome *et al.* suggests a method corresponding to the illustrated radiation image recording and read-out apparatus 200 (Fig. 10) which would comprise the steps of (i) supporting a stimuable phosphor sheet 226 at a position for image recording, (ii) exposing the one surface of the sheet 226 to radiation, (iii) performing an image read-out operation of the recited type with stimulating rays 252 and photoelectric detection 254 of the emitted light 40, and (iv) releasing energy remaining on the sheet 226 using erasing light sources 261 located in close vicinity to the stimuable phosphor sheet 226, but they are not sheet-shaped or on the side of the sheet 226 exposed to radiation. Arakawa shows that a sheet-shaped erasing light source 30 located in close vicinity to the stimuable phosphor sheet 20 and on a side of the one surface of the sheet

supported at the position for image recording (of object **50**) which is exposed to the radiation and furthermore irradiating erasing light to an entire area of the sheet **20** is known. Because the source **30** in the method of Arakawa is between the source **11** and the sheet **20**, its uniform transmissivity to radiation may be presumed. The sheet-shaped erasing light source **30** of Arakawa is plainly more compact than the bulky sources **261** of Saotome, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Saotome to comprise a sheet-shaped source erasing light in the location suggested by Arakawa since a smaller case **229** could be achieved that way.

With respect to dependent claim 2, the sheet-shaped erasing light source **30** suggested by Arakawa comprises an electroluminescence device (column 7, line 67). If the panel suggested by Arakawa is not in fact an organic electroluminescence device and the disclosure simply omits that characterization, then the choice of specifically an "organic" electroluminescence device must be considered a choice within the ordinary skill in the art in view of the known and effective performance of such a device to deliver light in erasing wavelengths.

With respect to dependent claim 3, Arakawa teaches that a source for producing the erasing light and a flat plate light guide for guiding the erasing light may be used (column 5, lines 1-3). The flat plate light guide suggested by Arakawa may be presumed to be transparent. The provision of additional erasing light sources is a choice within the ordinary skill in the art in view of the amount of erasing light desired. To the extent that the sheet-shaped erasing light source suggested by Arakawa would be on the side of the sheet **226** in the method of Saotome which is opposite to that of the image read-out means, the light transmission through the transparent sheet need not be exact and light diffusing properties would have been obvious to one of ordinary skill in the art in view of

the desire for consistent application of erasing energy to the sheet and avoidance of, say, "hot spots" in the transparent sheet near the source(s).

With respect to dependent claim 4, having at least one surface of the transparent sheet suggested by Arakawa be a light diffusing surface in the method of Saotome would have been obvious to one of ordinary skill in the art at the time the invention was made as this is one known method of equalizing the delivery of light through the surface, which equalization would have been recognized as useful with erasing light in view of the desire for consistent application of erasing energy.

With respect to dependent claim 5, having light diffusing particles dispersed throughout the transparent sheet suggested by Arakawa in the method of Saotome would have been obvious to one of ordinary skill in the art at the time the invention was made as this is one known method of equalizing the delivery of light through the sheet, which equalization would have been recognized as useful with erasing light in view of the desire for consistent application of erasing energy.

With respect to dependent claims 7/1, 7/2, 7/3, 7/4, and 7/5, the stimuable phosphor sheet **226** in the method of Saotome *et al.* in the embodiment of Fig. **10** is not kept stationary at the position for image recording, nor does the image read-out means move. Nevertheless, the configuration of the apparatus where the stimuable phosphor sheet is kept stationary at the position for image recording, and where the image read-out means moves (with the requisite unit **104** and means **140**) is known from Fig. **9A** of Saotome *et al.* and in view of the reduced overhang past the edge of the stimuable phosphor sheet (column 13, lines 14-16) and the compatibility with the sheet-shaped erasing light source **30** suggested by Arakawa, it would have been obvious to one of ordinary skill in the art at the time the invention was made depending on the intended application and the desired performance to use such a configuration instead.

With respect to dependent claim 17, maintenance of a stimuable phosphor sheet **102** during read-out and erasure is known from Saotome *et al.*

With respect to dependent claim 19, the erasing light of Saotome *et al.* is sufficient to erase all the energy remaining after read-out. The erasing light of Arakawa is also sufficient to achieve the recited condition, although its full capability need not be so used in the disclosure thereof.

With respect to independent claim 9, Saotome *et al.* discloses a radiation image recording and read-out apparatus **200** (Fig. **10**) comprising (i) an image recording section of the recited type for supporting a stimuable phosphor sheet **226**, (ii) image read-out means of the recited type with stimulating rays **252** and photoelectrically detected **254** emitted light **40**, and (iii) erasing light sources **261** located in close vicinity to the stimuable phosphor sheet **226**, but they are not sheet-shaped or on the side of the sheet **226** exposed to radiation. Arakawa shows that a sheet-shaped erasing light source **30** located in close vicinity to the stimuable phosphor sheet **20** and on a side of the one surface of the sheet supported at the position for image recording (of object **50**) which is exposed to the radiation and furthermore irradiating erasing light to an entire area of the sheet **20** is known. Because the source **30** in the apparatus of Arakawa is between the source **11** and the sheet **20**, its uniform transmissivity to radiation may be presumed. The sheet-shaped erasing light source **30** of Arakawa is plainly more compact than the bulky sources **261** of Saotome, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Saotome to comprise a sheet-shaped source erasing light in the location suggested by Arakawa since a smaller case **229** could be achieved that way.

With respect to dependent claim 10, the sheet-shaped erasing light source **30** suggested by Arakawa comprises an electroluminescence device (column 7, line 67). If the panel suggested by Arakawa is not in fact an organic electroluminescence device and the disclosure simply omits that

characterization, then the choice of specifically an “organic” electroluminescence device must be considered a choice within the ordinary skill in the art in view of the known and effective performance of such a device to deliver light in erasing wavelengths.

With respect to dependent claim 11, Arakawa teaches that a source for producing the erasing light and a flat plate light guide for guiding the erasing light may be used (column 5, lines 1-3). The flat plate light guide suggested by Arakawa may be presumed to be transparent. The provision of additional erasing light sources is a choice within the ordinary skill in the art in view of the amount of erasing light desired. To the extent that the sheet-shaped erasing light source suggested by Arakawa would be on the side of the sheet **226** in the apparatus of Saotome which is opposite to that of the image read-out means, the light transmission through the transparent sheet need not be exact and light diffusing properties would have been obvious to one of ordinary skill in the art in view of the desire for consistent application of erasing energy to the sheet and avoidance of, say, “hot spots” in the transparent sheet near the source(s).

With respect to dependent claim 12, having at least one surface of the transparent sheet suggested by Arakawa be a light diffusing surface in the apparatus of Saotome would have been obvious to one of ordinary skill in the art at the time the invention was made as this is one known method of equalizing the delivery of light through the surface, which equalization would have been recognized as useful with erasing light in view of the desire for consistent application of erasing energy.

With respect to dependent claim 13, having light diffusing particles dispersed throughout the transparent sheet suggested by Arakawa in the apparatus of Saotome would have been obvious to one of ordinary skill in the art at the time the invention was made as this is one known method of

equalizing the delivery of light through the sheet, which equalization would have been recognized as useful with erasing light in view of the desire for consistent application of erasing energy.

With respect to dependent claims 15/9, 15/10, 15/11, 15/12, and 15/13, the stimuable phosphor sheet **226** in the apparatus of Saotome *et al.* in the embodiment of Fig. **10** is not kept stationary at the position for image recording, nor does the image read-out means move.

Nevertheless, the configuration of the apparatus where the stimuable phosphor sheet is kept stationary at the position for image recording, and where the image read-out means moves (with the requisite unit **104** and means **140**) is known from Fig. **9A** of Saotome *et al.* and in view of the reduced overhang past the edge of the stimuable phosphor sheet (column 13, lines 14-16) and the compatibility with the sheet-shaped erasing light source **30** suggested by Arakawa, it would have been obvious to one of ordinary skill in the art at the time the invention was made depending on the intended application and the desired performance to use such a configuration instead.

With respect to dependent claim 18, maintenance of a stimuable phosphor sheet **102** during read-out and erasure is known from Saotome *et al.*

With respect to dependent claim 20, the erasing light of Saotome *et al.* is sufficient to erase all the energy remaining after read-out. The erasing light of Arakawa is also sufficient to achieve the recited condition, although its full capability need not be so used in the disclosure thereof.

4. Claims 6 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saotome *et al.* and Arakawa as applied to claims 3, 4, or 5, or 11, 12, or 13 above, and further in view of Saotome (US004814616A).

With respect to dependent claims 6/3, 6/4, and 6/5, or 14/11, 14/12, and 14/13, although Arakawa discloses an erasing light source **30** which is separate from stimuable phosphor sheet **20**, Saotome shows that a stimuable phosphor sheet comprising a sheet-shaped transparent substrate,

which also acts as the transparent sheet of a sheet-shaped erasing light source, overlaid with a stimuable phosphor layer is known (column 7, lines 24-29, see Fig. 5). In view of the compact arrangement and the direct application of erasing energy to the stimuable phosphor layer (also note that the erasing light source in Saotome is on the recited side of the stimuable phosphor layer **12**) it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus suggested by Saotome *et al.* and Arakawa to specify that the stimuable phosphor layer was on a substrate which acted as the transparent sheet of the erasing light source.

5. Claims 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saotome *et al.*, Arakawa and Saotome as applied to claims 7 and 15 above, and further in view of Ohyama *et al.* (US004767927A).

With respect to dependent claims 8 and 16, the image read-out means in the apparatus of Saotome *et al.* comprises a line sensor but the stimulating ray source irradiates an area of the stimuable phosphor sheet in a main scanning direction which is linear without being "linear" itself. Ohyama *et al.* shows that a linear stimulating ray source **30** is known (Ohyama *et al.* also shows a line sensor **28**). In view of the reduction in the number of moving parts, for example, through the use of a "linear" stimulating ray source as suggested by Ohyama *et al.*, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method suggested by Saotome *et al.*, Arakawa, and Saotome to comprise an image read-out unit with a linear stimulating ray source in place of the scanned point source.

Response to Submission(s)

6. The amendment filed September 22, 2003 has been entered. Note that the amendment to the specification is defective as noted above.

7. Applicant's arguments filed September 22, 2003 have been fully considered but they are not persuasive.

In response to applicant's argument that the EL panel **30** of Arakawa is "incapable" of achieving the strong erasing already disclosed by the sources, *e.g.*, **261** of Saotome *et al.*, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Applicant's argument goes beyond the disclosure of Arakawa which merely teaches that strong erasing for rendering the stimulable phosphor sheet reusable need not be carried out. Since those of ordinary skill in the art can readily apprehend that refraining is not the same as incapacity, and that strong erasing may be achieved by adjustment of the length of time the erasing light source is operated, for example, there is no barrier to implementing the EL panel approach to erasing of Arakawa in the method and apparatus of Saotome *et al.*

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (*i.e.*, simple and compact structure achieved by advantageous implementations of the embodiments) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The stationary stimulable phosphor sheet **102** and moving image read-out unit **104** are incontrovertibly disclosed in Fig. **9A** of Saotome *et al.* as explained in the rejection of claims 7 and 15. The sheet-shaped erasing light source is suggested by Arakawa and reasonably accords with the case **111** of Saotome *et al.* Accordingly, all of the recited elements of

claims 7 and 15 are disclosed and/or suggested by the applied references and applicant's argument of the impossibility of bodily incorporation is not a proper legal test of the obviousness of the combination.

For at least the reasons explained above, Applicant is not entitled to a favorable determination of patentability in view of the arguments submitted September 22, 2003.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Constantine Hannaher whose telephone number is (703) 308-4850. The examiner can normally be reached on Monday-Friday with flexible hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (703) 308-4852. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Application/Control Number: 09/943,355
Art Unit: 2878

Page: 11

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

ch


Constantine Hannaher
Primary Examiner